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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/745,621	12/21/2000	Kai Eck	PHD 99,198	1118

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EXAMINER

AZARIAN, SEYED H

ART UNIT PAPER NUMBER

2625

DATE MAILED: 02/04/2004

9

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/745,621

Applicant(s)

ECK ET AL.

Examiner

Seyed Azarian

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-7, 10, 12, 13 and 15-18 is/are rejected.
- 7) ☒ Claim(s) 8, 9, 11 and 14 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 21 December 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4, 8. 6) ☐ Other: .

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-5, 10, 12-13, 15, 17 and 18, are rejected under 35 U.S.C. 102(b) as being anticipated by Diepstraten (U.S. patent 5,602,896).

Regarding claim 1, Diepstraten discloses composing an image from sub-images comprising;

a device for-forming an image, which is composed of a plurality of sub-areas (T1 to Tn), which device includes (column 5, lines 45-57, the first and second sub-images are used);

a detector, which includes a plurality of sensor elements for generating image data, read-out units (V1 to Vn) that are associated with the sub-areas (T1 to T2) of the image (Fig. 1, column 6, lines 16-34, refer to optical image and image sensors 2 and 3 which supplies an electronic sub-image signal representing brightness value);

an analysis unit (12) which is arranged to evaluate image data form adjoining image areas (S63 and S66) of neighboring sub-areas (T1 and T2) and to generate Correction data, and a

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correction unit (13) which is arranged to correct incorrect linage data by means of correction data (column 6, lines 34-47, evaluate sub-image brightness by the sensors and correction unit for correcting image signal).

Regarding claim 2, Diepstraten discloses a device, characterized in that the detector includes a plurality of sensor elements which are arranged in rows and columns column forming a matrix (column 4, lines 9-13 the column and line gain factors are derived from brightness values of a first and second reference image picked up by the first image sensor and the second image sensor, respectively).

Regarding claim 3, Diepstraten discloses a device, characterized in that rows or columns, or pails thereof, constitute an image area, that a plurality of image areas constitute a sub-area, and that amplifiers are arranged so as to read out sub-areas (column 8, lines 23-35, whereto the amplifier is adjusted by correction unit).

Regarding claim 4, Diepstraten discloses a device, characterized in that there is provided a memory (14) for storing the, correction data (column 5, lines 24-29, memory for correction data).

Regarding claim 5, Diepstraten discloses a device, characterized in that the image data is applied to the analysis unit (12) at a reduce rate (column 8, lines 8-16, image in comparison and adjusted amplifier to reducing value).

Regarding claim 10, Diepstraten discloses a method of forming an image which is composed of a plurality of sub-area wherein a read-out unit is associated with each sub-area, characterized in the image data from adjoining images areas of neighboring sub-areas evaluated

in order to mitigate differences between amplifier characteristics (see claim 1 and column 8, line 58 through column 9, line 3, refer to adjusts the amplifier and different setting).

Regarding claim 17, Diepstraten discloses an x-ray examination apparatus, which includes an X-ray source for emitting X-rays and for forming an X-ray image, an X-ray detector for forming an optical image from the X-ray image, which detector includes sensor elements arranged in rows and columns and at least two amplifiers (V1 to VN) for reading out detected image data, at least one, amplifier being associated with each sub area (TI to TN) in order to read out detected image data (column 6, lines 49-65, the energy and intensity of the X-ray source can be adjusted on the basis of the setting).

Regarding claims 12, 13, 15 and 18, it recites similar limitation as claims 1 and 3, are similarly analyzed.

Claim Rejections - 35 USC § 103

3. Following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 6-7 and 16, are rejected under 35 U.S.C. 103(a) as being unpatentable over Diepstraten (U.S. patent 5,602,896) in view of Bamberger et al (U.S. patent 5,946,407).

Regarding claim 6, Diepstraten is silent about “cumulative histograms”. On the other hand Bamberger teaches the cumulative histogram are logarithmic the look-up table which transforms the gray level values of digital image in the region of interest (column 10, lines 39-50).

Therefore it would have been obvious to one having ordinary skill in the art at the time of the invention was made, to modify Diepstraten sub-image invention according to the teaching of Bamberger because it provides plurality of image enhancement features including gray scale stretching, contrast enhancement based on histogram equalization which improve visualization of suspected lesions and cost and risks of more tests which, can be implements X-ray device.

Regarding claim 7, Diepstraten discloses a device, characterized in that the histogram generator (15) is arranged to receive the image data and to generate histograms over a selectable period of time (column 3, lines 65 through column 4, line 8, correction of brightness in short period of time).

Regarding claim 16, recites similar limitation as claims 1 and 6 are similarly analyzed.

Allowable Subject Matter

5. Claims 8, 9, 11 and 14 and are objected as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitation of the base claim and any intervening claims.

Other prior art cited

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

U.S. patent (5,737,015) to Juen is cited for imaging device equipped with multiple output channel imaging element.

U.S. patent (6,240,162) to Hernandez Guerra et al is cited for precision dosimetry in an intensity modulated radiation treatment system.

U.S. patent (6,108,399) to Hernandez-Guerra et al is cited for system and method for dose monitoring in an intensity modulated radiation treatment system.

U.S. patent (6,072,603) to Parks is cited for multiple output CCD image block balancing.

U.S. patent (6,028,913) to Meulenbrugge et al is cited for X-ray examination apparatus including an image sensor matrix with a correction unit.

Contact Information

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Seyed Azarian whose telephone number is (703) 306-5907. The examiner can normally be reached on Monday through Thursday from 6:00 a.m. to 7:30 p.m. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bhavesh Mehta, can be reached at (703) 308-5246.

Any response to this action should be mailed to:

Assistant Commissioner for Patents
Washington, D.C. 20231

Or faxed to:

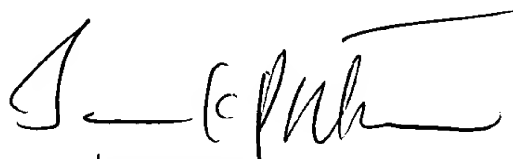
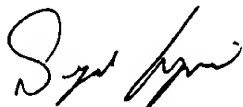
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(703) 872-9306, ("draft" or "informal" communications should be clearly labeled to expedite delivery to examiner).

Hand delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA., Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application should be directed to T.C. customer service office whose telephone number is (703) 306-0377.

Syed Azarian
Patent Examiner
Group Art Unit 2625
January 28, 2004



Jayanti K. Patel
Primary Examiner